UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,245	01/31/2001	Heino Hameleers	34648-463USPX P11147US	6149

27045 7590 07/01/2004

ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR C11
PLANO, TX 75024

EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	9

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/773,245	HAMELEERS ET AL.	
	Examiner	Art Unit	
	Ian N Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, "...an information frame generating and suppressing station for generating an information frame with a receive sequence number and **comprising user information of the telephone call** and **being transferred to and from the interface on a direct route** assigned to the telephone call within the second layer..." in line 17, page 52 and page 53 line 1. It is unclear **what** comprises **user information of the telephone call**: an information frame, or an information frame generating and suppressing station. Also, it is unclear what is being transferred to and from the interface on a directed route: an information frame, or an information frame with a receive sequence number.

Claim 9 is also reject for the same reason as stated above.

Claim Objections

2. Claims 13 and 14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required

to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 13 recites, "...wherein **in a synchronous bearer service mode bits** of data stream... in a asynchronous bearer service mode..." in line 2-5. Claim 1, a claim which claim 13 depends, does not disclose any form of service modes.

Claim 14, recites, "...wherein **non-transparent bearer service** provides..." in line 2. Claim 1, a claim which claim 14 depends, does not disclose any form of bearer service.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1,2,4,6,7,15,19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billstrom (U.S. 5,590,133) in view of Kaiyama (U.S. 5,615,210).

Regarding claims 1 and 19, Billstrom'133 discloses a communication network part or element comprising:

an interface (**see FIG. 1, a combined interface system of HLR, HLR interrogation server, PD controller, MSC/VLR, OMC, NAS, and IWF**) for coupling a cellular telephone network (**see FIG. 1, digital cellular packet domain**) to a further network (**see FIG. 1, PSTN/ISDN/external networks)**

the interface having a circuit for causing signaling information exchange between the cellular telephone network and the further network (**see FIG. 1, signaling data information is exchanged between the networks; note that the combined interface system establishes a circuit/connection between users between the networks; see col. 6, lines 34-65**) and for causing user or payload information exchange between the cellular telephone network and the further network (**see FIG. 1, packet data and circuit/voice data information are exchanged between the networks; see col. 6, lines 65 to col. 8, lines 21**);

a first layer (**see FIG. 1, a combined signaling layer of HLR, HLR interrogation server, PD controller, BSC, MSC/VLR, OMC, and NAS**) for transferring signalling information assigned to a telephone call being processed in the cellular telephone network (**see col. 6, lines 34-65; see col. 9, lines 20-34; note that a combined signaling layer transfers/establishes the signaling information assigned/allocated to the telephone/MS/TE/MT call/connection in the digital cellular packet network**);

and a second layer (**see FIG. 1, a combined transport layer of MS, BTS and MSC and IWF**) for transferring payload information assigned to the telephone call being coupled to the interface (**see col. 6, lines 65 to col. 8, lines 21; see col. 9, lines 20 to col. 10, lines 6; note that a combined transport layer transfers/communicates the packet/voice information assigned/allocated to the telephone/MS/TE/MT call/connection which is coupled/connected to the combined interface system**) wherein the second layer comprises:

an information frame generating station (**see FIG. 2 and 3 BTS, Base Transceiver Station**) for generating an information frame with a receive sequence number (**see col. 8, lines 1-46; note that BTS generates the information packet/frame with a received**

TCP/IP sequence number to/from the MS. Also, note that each TCP/IP packet/frame has a sequence number) and

comprising user information of the telephone call and being transferred to and from the interface on a direct route assigned to the telephone call within the second layer (**see FIG. 1, note that MS user information of the telephone/MS/TE/MT call/connection are being transmitted/received to and from the combined interface system on an established/directed connection within the combined transport layer; see col. 7, lines 40-56, see col. 8, lines 1-46, see col. 21, lines 33 to col. 22, lines 61),** and

a radio network (**see FIG. 1, a combined system of MS and BSS**) comprising a adaptation function for a adaptation of the payload information transfer assigned to the telephone call (**see col. 7, lines 1-17, see col. 10, lines 6-13; note that BTS allocates the packet data channels (i.e. the payload information channel assigned to the call) dynamically, adapted to the current load situation for transmission/transfer of the packet information**).

Billstrom'133 does not explicitly discloses suppressing station, for suppressing transfer of an information frame if the information frame does not include any user information, and rate adaptation.

However, the above-mentioned claimed limitations are taught by Kaiyama'210. In particular, Kaiyama'210 teaches wherein a second layer (**see FIG. 6, a combined transport layer of radio bases station 101 and mobile switching center 107**) comprising;

an information frame generating and suppressing station (**see FIG. 6, Radio Base Station 101 generates and suppresses/discards the frames/packets);**

for suppressing transfer of an information frame within the second layer if the information frame does not include any user information (**see FIG. 6, step 43; discard empty packet which does not contain/include any user information; see col. 12, lines 14-27**), and

a rate adaptation function for a rate adaptation of the payload information transfer (**see FIG. 1, Assembly/reassembly circuit 103; see col. 12, lines 14-27; note that the assembly and reassembly circuit performs the rate adaptation of the payload information at the Base station**).

In view of this, having the system of Billstrom'133 and then given the teaching of Kaiyama'210, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Billstrom'133, for the purpose of providing discarding empty packet and rate adaptation mechanism, as taught by Kaiyama'210, since Kaiyama'210 states the advantages/benefits at col. 10, lines 20-28 that it would provide different types of switches to be implemented using the same hardware configuration. The motivation being that by discarding the empty packets for different packet length producing switches, it can save the hardware design cost since all switches can be implemented with the same hardware.

Regarding claim 2, Billstrom'133 discloses wherein the second layer of the cellular telephone network comprises a plurality of base transceiver stations (**see col. 6, lines 35-39; a plurality of base transceiver stations**), and

wherein a base transceiver station is directly connected to the interface for user information exchange within the second layer (**see FIG. 1-3, Base transceiver station, BTS, is directly connected to user interface for packet transmission of the combined transport layer**), and

wherein the base transceiver station comprises said frame-generating station (**see FIG. 2 and 3, BTS encapsulates/generates the frame; see col. 8, line 4-21**).

Billstrom'133 does not explicitly disclose wherein the base transceiver station (**see Kaiyama'210, FIG. 6, Radio Base Station 101 with transceivers**) comprises said frame suppressing station (**see Kaiyama'210 FIG. 6, packet discarding means S43; col. 12, line 18-27; note that BTS discards the empty packets, thus it has a suppressing/discarding means**).

However, the above-mentioned claimed limitations are taught by Kaiyama'210. In view of this, having the system of Billstrom'133 and then given the teaching of Kaiyama'210, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Billstrom'133, for the same purpose as described above in claim 1.

Regarding claims 4 and 20, the combined system of Billstrom'133 and Kaiyama'210 discloses wherein an information frame, and the information frame generating and suppressing station discards an information frame does not provide any user information as described above in claims 1 and 19.

Kaiyama'210 further discloses disclose wherein an information frame discloses specifying information that the information frame does not provide any user information **(see Kaiyama'210 FIG. 2, 201 address part of the empty packet/frame set to "0"; see col. 12, lines 5-10; col. 14, lines 26-37)** and

wherein discarding an information frame received if it comprises the specifying-information **(see Kaiyama'210 FIG. 6, packet discarding means S43; col. 12, line 18-27; note that BTS discards the empty packets/frame with address part set to "0")**.

However, the above-mentioned claimed limitations are taught by Kaiyama'210. In view of this, having the system of Billstrom'133 and then given the teaching of Kaiyama'210, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Billstrom'133, for the same purpose as described above in claims 1 and 19.

Regarding claims 6 and 15, the combined system of Billstrom'133 and Kaiyama'210 discloses the information frame generating and suppressing station in the base transceiver station as described above in claim 1.

Billstrom'133 further discloses a radio link protocol (RLP) for generating radio link protocol frames for reliable data transmission **(see FIG. 2 and 3; Radio Link Protocols, RL1 and RL2)**, said RLP being implemented the base transceiver station **(see FIG. 2 and 3, a reliable data transmission RL1 and RL2 is implemented in BTS; see col. 8, lines 1-46).**

Regarding claim 7, the combined system of Billstrom'133 and Kaiyama'210 discloses wherein the second layer established to provide a transmission of user data within the second layer of data transmission as described above in claim 1.

Billstrom'133 further discloses wherein the second layer comprises:

a first protocol stack and is implemented in a mobile station (**see FIG. 2 and 3, MS protocol stack**),

a second protocol stack which is implemented in a base transceiver station (**see FIG. 2 and 3, BTS protocol Stack**) and

a third protocol stack which is implemented in a media gateway of the interface (**see FIG. 2 and 3, a combined system of IWF and MSC protocol stack,**

wherein the first, second and third protocol stacks are established to provide a transmission of user data within the second layer in an uplink and downlink direction of data transmission (**see FIG. 2 and 3; note that the protocol stacks are utilized for establishing and transmission of the MS subscriber/user information between the MS and BTS (i.e. uplink and downlink direction of data transmission); see col. 7, lines 57 to col. 9, lines 19).**

4. Claims 3 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billstrom'133 and Kaiyama'210, as applied to claims 1 and 2 above, and further in view of Rasanen (U.S. 6,647,006).

Regarding claim 3, Billstrom'133 disclose wherein the interface comprises media gateway unit (**see FIG. 1-3, a combined interface system comprising IWF and MSC**) for

user information exchange between the cellular telephone network (**see FIG. 1, digital cellular packet domain**) and the further network (**see FIG. 1, PSTN/ISDN/external networks)** and to be coupled directly to the base transceiver stations (**see FIG. 1, IWF directly connected to BTS**), and wherein the media gateway unit comprises the frame generating (**see FIG. 2 and 3, the combined system of IWF and MSC generates frames; see col. 8, lines 1-46**).

an interface (**see FIG. 1, a combined interface system of HLR, HLR interrogation server, PD controller, MSC/VLR, OMC, NAS, and IWF**) for coupling a cellular telephone network (**see FIG. 1, digital cellular packet domain**) to a further network (**see FIG. 1, PSTN/ISDN/external networks).**

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses wherein the media gateway unit (**see Rasanen'006 FIG. 5, Inter-working Function unit, IWF, is the gateway unit**) comprises the frame suppressing station (**see Rasanen'006 see FIG. 5, IWF comprises the fill data discarding means/station in order to discard the fill data; col. 7, line 50-64**).

However, the above-mentioned claimed limitations are taught by Rasanen'006. In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Rasanen'006, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and Kaiyama'210, for the purpose of providing discarding means/station/mechanism at the gate way unit, as taught by Rasanen'006, since Rasanen'006 states the advantages/benefits at col. 3, lines 28-42 that it would provide not requiring any other changes at the radio interface or the network interface, nor does it restrict their further development in any way. The

motivation being that by discarding the fill data that gateway IWF unit, it will reduce the packet processing at the radio and network interface while preparing the network for further development.

Regarding claim 16, the combined system of Billstrom'133 and Kaiyama'210 discloses the radio network as described above in claim 1.

Billstrom'133 further discloses the radio network comprises the base transceiver stations **(see col. 6, lines 35-39; a plurality of base transceiver stations).**

Regarding claim 17, the combined system of Billstrom'133 and Kaiyama'210 discloses a rate adaptation function for a rate adaptation of the payload information transfer assigned to the telephone call as described above in claim 1.

Billstrom'133 further discloses an adaptive circuit **(see FIG. 1, a combined adaptation/modifying system of PD related function, PDCH junction, and PD transfer Controller)** for causing radio adaptation of the payload information transfer assigned to the telephone call towards a mobile station **(see col. 7, lines 1-17, see col. 10, lines 6-13; note that the combined adaptation/modifying system allocates the packet data channels (i.e. the payload information channel assigned to the call) dynamically, and encapsulated into the a radio frame for transmission towards the mobile station; see FIG. 2 and 3; see col. 7, lines 28 to col. 8, lines 46)**, said radio adaptation being performed in base transceiver stations **(see FIG. 1, each BTS contains combined adaptation/modifying system of PD related function, PDCH junction, and PD transfer Controller).**

Regarding claim 18, the combined system of Billstrom'133 and Kaiyama'210 discloses a rate adaptation function for a rate adaptation of the payload information transfer assigned to the telephone call as described above in claim 1.

Billstrom'133 further discloses an adaptive circuit **(see FIG. 1, a combined adaptation/modifying system of PD related function, PDCH junction, and PD transfer Controller)** for causing radio adaptation of the payload information transfer assigned to the telephone call towards the media gateway **(see col. 7, lines 1-17, see col. 10, lines 6-13; note that the combined adaptation/modifying system allocates the packet data channels (i.e. the payload information channel assigned to the call) dynamically, and encapsulated into the a network frame for transmission towards IWF unit; see FIG. 2 and 3; see col. 7, lines 28 to col. 8, lines 46)**, said radio adaptation being performed in base transceiver stations **(see FIG. 1, each BTS contains combined adaptation/modifying system of PD related function, PDCH junction, and PD transfer Controller).**

5. Claim 5 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billstrom'133 and Kaiyama'210, as applied to claims 1 and 19, and further in view of Bellaton (U.S. 6,473,425).

Regarding claims 5 and 21, the combined system of Billstrom'133 and Kaiyama'210 disclose wherein the information frame generating and suppressing station discards a information frame if the information frame does not include any user information as described above in claims 1 and 19.

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses wherein an information frame includes a receive-sequence number (**see Bellaton'425 FIG. 5B, Acknowledge Number**) that designates the next information frame to be sent (**see Bellaton'425 col. 4, lines 50-56; note that the packet contains a received acknowledgement number which informs/designated the sender regarding the next packet to be sent**), and

wherein discarding a current information frame if a receive sequence number of the current information frame is equal to a receive-sequence number of a previous information frame received (**see Bellaton'425 col. 4, lines 44-56; see col. 6, lines 39-47; see col. 9, lines 41-66; note that a packet is dropped when a sequence number of the packet is equal to the packet that has already in the queue (i.e. retransmission or duplicate packet**).

However, the above-mentioned claimed limitations are taught by Bellaton'425. In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Bellaton'425, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and Bellaton'425, for the purpose of providing dropping a duplicate/retransmitted packets according to the sequence number, as taught by Bellaton'425, since Bellaton'425 states the advantages/benefits at col. 5, lines 60 to col. 6, lines 7 that it would avoid unnecessary duplicated transmission and processing of duplicated packets, thereby avoiding the packet transmission delay and reduce congestion. The motivation being that by discarding duplicate packets, it will increase the network performance by reducing the congestion in the network and avoiding unnecessary retransmission.

6. Claims 8-11, 14, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billstrom'133 and Kaiyama'210, as applied to claims 1 and 19 above, and further in view of Sipila (U.S. 6,081,534)).

Regarding claims 8-11, the combined system of Billstrom'133 and Kaiyama'210 disclose wherein transmission of user data provided by a communication network as described above in claims 1 and 19.

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses an asynchronous non-transparent bearer service (**see Sipila'534 FIG. 1 and 2; Asynch Data RA0; note that the user data transmission utilizes an asynchronous non-transparent bearer service**);

asynchronous transparent bearer service (**see Sipila'534 FIG. 1 and 2; Asynch Data RA0; note that the user data transmission utilizes an asynchronous transparent bearer service**);

synchronous non-transparent bearer service (**see Sipila'534 FIG. 1 and 2; Synch Data RA1; note that the user data transmission utilizes an synchronous non-transparent bearer service**); or

synchronous transparent bearer service (**see Sipila'534 FIG. 1 and 2; Synch Data RA1; note that the user data transmission utilizes an synchronous transparent bearer service**); **see col. 3, lines 55 to col. 4, lines 26; see col. 6, lines 6-27**.

However, the above-mentioned claimed limitations are taught by Sipila'534. In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Sipila'534, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and

Kaiyama'210, for the purpose of providing an synchronous/asynchronous transparent/non-transparent bearer service, as taught by Sipila'534, since Sipila'534 states the advantages/benefits at col. 2, lines 2-11, 40-44; col. 4, lines 15-17 that it would provide a rate adaptation required by the GSM system in data communication between two systems, and possible to perform error correction. The motivation being that by implementation and utilizing the different types bearer services, it will enhance rate adaptability between two communication networks, and increase the network performance.

Regarding claim 14, the combined system of Billstrom'133 and Kaiyama'210 disclose wherein transmission of user data provided by a communication network as described above in claims 1.

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses wherein non-transparent bearer service (**see Sipila'534 FIG. 1 and 2; Asynch Data RA0; note that the user data transmission utilizes a non-transparent bearer service**) provides a reliable data transmission and

wherein transparent bearer service (**see Sipila'534 FIG. 1 and 2; Asynch Data RA0; note that the user data transmission utilizes a transparent bearer service**) does not guarantee a reliable data transmission (**see Sipila'534 col. 3, lines 55 to col. 4, lines 26; note that non-transparent bearer service utilizes the error correction, thus it is a reliable transmission. However, transparent bearer service does not utilize the error correction, thus it cannot provide reliable/guarantee transmission**).

However, the above-mentioned claimed limitations are taught by Sipila'534. In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Sipila'534, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and Kaiyama'210, for the purpose of providing a transparent and non-transparent bearer service, as taught by Sipila'534, since Sipila'534 states the advantages/benefits at col. 2, lines 2-11, 40-44; col. 4, lines 15-17 that it would provide a rate adaptation required by the GSM system in data communication between two systems, and possible to perform error correction. The motivation being that by implementation and utilizing the different types bearer services, it will enhance rate adaptability between two communication networks, and increase the network performance.

Regarding claims 22 and 23, the combined system of Billstrom'133 and Kaiyama'210 disclose adapting the transfer rate of the payload information assigned to the telephone call within the radio network as described above in claims 19.

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses adapting the transfer rate towards a mobile station or base transceiver station.

However, the above-mentioned claimed limitations are taught by Sipila'534. In particular, Sipila'534 discloses adapting the transfer rate of the payload information (**see FIG. 1 and 2, RA0 and RA1**) is performed for a telephone call within the radio network (see FIG. 1 and 2, a radio network) towards a mobile station (**see FIG. 1 and 2, MS 2**) or base transceiver station (**see Sipila'534 FIG. 1 and 2, BTS 5; note that the user data transfer**

rate is adapted (i.e. RA0 or RA1) towards a mobile station or a base transceiver station (see col. 4, lines 40 to col. 5, lines 59).

In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Sipila'534, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and Kaiyama'210, for the purpose of adapting a transfer rate towards a mobile or base transceiver station, as taught by Sipila'534, since Sipila'534 states the advantages/benefits at col. 2, lines 2-11, 40-44; col. 4, lines 15-17 that it would provide a rate adaptation required by the GSM system in data communication between two systems, and possible to perform error correction. The motivation being that by implementation and utilizing the different types bearer services, it will enhance rate adaptability between two communication networks, and increase the network performance.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billstrom'133 and Kaiyama'210, as applied to claim 1 above, and further in view of Rasanen (U.S. 6,674,741).

Regarding claim 12, the combined system of Billstrom'133 and Kaiyama'210 disclose wherein transmission of user data as described above in claim 1. Billstrom'133 further discloses a first protocol stack and is implemented in a mobile station (**see FIG. 2 and 3, MS protocol stack**),

a second protocol stack, which is implemented in a base transceiver station (**see FIG. 2 and 3, BTS protocol Stack**).

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses HSCSD (High Speed Circuit Switched Data) bearer services (**see Rasanen'741 FIG. 1, TAF adapts the MS to established connection by using one or more HSCSD channels; see col. 4, lines 55-60**), and a base transceiver station containing a S/C (Split/Combine) function (**see Rasanen'741 FIG. 2, Splitter 82 and combiner 85; note that an information frame is spited and combined between the MS and BTS. Thus, it is clear that BTS contains a split and combine function; see Rasanen'741 col. 5, lines 55 to col. 6, lines 5, 22-32).**

However, the above-mentioned claimed limitations are taught by Rasanen'741. In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Rasanen'741, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and Kaiyama'210, for the purpose of providing HSCSD and S/C functions to the communication network, as taught by Rasanen'741, since Rasanen'741 states the advantages/benefits at col. 1, lines 41-52; to col. 6, lines 55-65 that it would provide higher transfer rate by splitting the high speed data traffic utilizing defined HSCSD service. The motivation being that by utilizing well-known defined HSCSD system and splitting/combining functionality, it will increase the network performance by increasing the transfer rate.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billstrom'133, Kaiyama'210, as applied to claim 1 above, and further in view of Sipila'534 and well established teaching in art.

Regarding claim 13, the combined system of Billstrom'133 and Kaiyama'210 disclose wherein transmission of user data as described above in claim 1.

Neither Billstrom'133 nor Kaiyama'210 explicitly discloses an asynchronous bearer service **(see Sipila'534 FIG. 1 and 2; Asynch Data RA0; note that the user data transmission utilizes an asynchronous bearer service)**;

synchronous bearer service **(see Sipila'534 FIG. 1 and 2; Synch Data RA1; note that the user data transmission utilizes an synchronous non-transparent bearer service) see col. 3, lines 55 to col. 4, lines 26; see col. 6, lines 6-27**.

However, the above-mentioned claimed limitations are taught by Sipila'534. In view of this, having the combined system of Billstrom'133 and Kaiyama'210, then given the teaching of Sipila'534, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133 and Sipila'534, for the purpose of providing an synchronous/asynchronous transparent/non-transparent bearer service, as taught by Sipila'534, since Sipila'534 states the advantages/benefits at col. 2, lines 2-11, 40-44; col. 4, lines 15-17 that it would provide a rate adaptation required by the GSM system in data communication between two systems, and possible to perform error correction. The motivation being that by implementation and utilizing the different types bearer services, it will enhance rate adaptability between two communication networks, and increase the network performance.

Neither Billstrom'133, Kaiyama'210 nor Sipila'534 discloses a synchronous mode bits of data stream are transmitted regularly and continuously on the basis of a time clock and, in an asynchronous mode, transmission of bits is not aligned on a regular time clock. It is well

known in the art of GSM that synchronous mode bits of data stream are transmitted regularly and continuously on the basis of a time clock and, in an asynchronous mode, transmission of bits is not aligned on a regular time clock. Moreover, it is well known in the art communication network, in order to provide synchronized communication services both sender and receiver must be aligned and operation from the same clock (e.g. BITS, Building Integrated Timing Source, BITS, using in the network). Alternatively, in order to provide asynchronous communication service both sender and receiver do not need to align and operation from the same clock.

However, the above-mentioned claimed limitations are taught by well-established teaching in art. In view of this, having the combined system of Billstrom'133, Kaiyama'210 and Sipila'534, then given the teaching of well established teaching in art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Billstrom'133, Kaiyama'210 and Sipila'534, for the purpose of providing an synchronous/asynchronous communication service, as taught by well established teaching in art. The motivation being that by utilizing the same clock, it can reduce the jitter and noise in the transmission due to lost packets in a synchronous service; by not utilizing the same clock for asynchronous service, it can reduce the cost of implementing the same clock, and reducing extraneous synchronization message between sender and receiver.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 703-605-1531. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on 703-308-7828. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM
6/21/04

KENNETH VANDERPUYE
PRIMARY EXAMINER